```
     FILE 'REGISTRY' ENTERED AT 16:55:19 ON 05 MAR 2003
L8             0 S EC 1.11.1.12/CN
L9             1 S PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE/CN

     FILE 'CA' ENTERED AT 16:57:00 ON 05 MAR 2003
L10         1098 S L1
L11          231 S L9
                 S 97089-70-8/REG#

     FILE 'REGISTRY' ENTERED AT 16:57:29 ON 05 MAR 2003
L12            1 S 97089-70-8/RN

     FILE 'CA' ENTERED AT 16:57:30 ON 05 MAR 2003
L13          231 S L12
L14           18 S L13 AND INHIBITOR
L15           18 S L13 AND L14

=>
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> s l9
L11         231 L9

=> s 97089-70-8
   REGISTRY INITIATED
Substance data SEARCH and crossover from CAS REGISTRY in progress...
Use DISPLAY HITSTR (or FHITSTR) to directly view retrieved structures.

L13         231 L12


=> s l13 and inhibitor
         396059 INHIBITOR
         420358 INHIBITORS
         644275 INHIBITOR
                  (INHIBITOR OR INHIBITORS)
L14          18 L13 AND INHIBITOR

=> s l13 and l14
L15          18 L13 AND L14

=> d ti 1-18

L15  ANSWER 1 OF 18  CA  COPYRIGHT 2003 ACS
TI   Novel aspects related to biosynthesis and biological actions of
     hepoxilins: interrelationship with phospholipid hydroperoxide glutathione
     peroxidase (PHGPx)

L15  ANSWER 2 OF 18  CA  COPYRIGHT 2003 ACS
TI   Involvement of reactive oxygen species in arsenite-induced downregulation
     of phospholipid hydroperoxide glutathione peroxidase in human epidermoid
     carcinoma A431 cells

L15  ANSWER 3 OF 18  CA  COPYRIGHT 2003 ACS
TI   Effects of signaling molecules, protein phosphatase inhibitors
     and blast pathogen (Magnaporthe grisea) on the mRNA level of a rice (Oryza
     sativa L.) phospholipid hydroperoxide glutathione peroxidase (OsPHGPX)
     gene in seedling leaves

L15  ANSWER 4 OF 18  CA  COPYRIGHT 2003 ACS
TI   Gene expression profiles associated with osteoblast differentiation

L15  ANSWER 5 OF 18  CA  COPYRIGHT 2003 ACS
TI   Saccharomyces cerevisiae expresses three phospholipid hydroperoxide
     glutathione peroxidases

L15  ANSWER 6 OF 18  CA  COPYRIGHT 2003 ACS
TI   Phospholipid hydroperoxide glutathione peroxidase protects against singlet
     oxygen-induced cell damage of photodynamic therapy

L15  ANSWER 7 OF 18  CA  COPYRIGHT 2003 ACS
TI   Criteria for the identification of housekeeping genes and their use as
     internal standards in the measurement of levels of gene expression

L15  ANSWER 8 OF 18  CA  COPYRIGHT 2003 ACS
TI   Method for identifying toxic agents in liver tissues using differential
     gene expression

L15  ANSWER 9 OF 18  CA  COPYRIGHT 2003 ACS
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L9 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2003 ACS
RN 97089-70-8 REGISTRY
CN Peroxidase, glutathione (phospholipid hydroperoxide-reducing) (9CI) (CA INDEX NAME)
OTHER NAMES:
CN E.C. 1.11.1.12
CN **Phospholipid hydroperoxide glutathione peroxidase**
CN Selenoperoxidase
MF Unspecified
CI MAN
LC STN Files: AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CAPLUS, CASREACT, EMBASE, TOXCENTER, USPATFULL

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
231 REFERENCES IN FILE CA (1962 TO DATE)
4 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
231 REFERENCES IN FILE CAPLUS (1962 TO DATE)

TI Involvement of phospholipid hydroperoxide glutathione peroxidase in the modulation of prostaglandin D2 synthesis

L15 ANSWER 10 OF 18 CA COPYRIGHT 2003 ACS
TI Method to search for male antifertility drugs based on PHGPx activity determination

L15 ANSWER 11 OF 18 CA COPYRIGHT 2003 ACS
TI Identification of a lipoxygenase **inhibitor** in A431 cells as a phospholipid hydroperoxide glutathione peroxidase

L15 ANSWER 12 OF 18 CA COPYRIGHT 2003 ACS
TI Overexpression of phospholipid hydroperoxide glutathione peroxidase suppressed cell death due to oxidative damage in rat basophile leukemia cells (RBL-2H3)

L15 ANSWER 13 OF 18 CA COPYRIGHT 2003 ACS
TI Purification of a cytosolic enzyme from human liver with phospholipid hydroperoxide glutathione peroxidase activity

L15 ANSWER 14 OF 18 CA COPYRIGHT 2003 ACS
TI Superoxide dismutase gene mutations as causes of neurodegenerative diseases and compounds and methods for the diagnosis, treatment, and prevention of the diseases

L15 ANSWER 15 OF 18 CA COPYRIGHT 2003 ACS
TI Selenoperoxidase-mediated cytoprotection against merocyanine 540-sensitized photoperoxidation and photokilling of leukemia cells

L15 ANSWER 16 OF 18 CA COPYRIGHT 2003 ACS
TI Antioxidant effect of Ebselen (PZ 51): peroxidase mimetic activity on phospholipid and cholesterol hydroperoxides vs free radical scavenger activity

L15 ANSWER 17 OF 18 CA COPYRIGHT 2003 ACS
TI Lethal damage to murine L1210 cells by exogenous lipid hydroperoxides: protective role of glutathione-dependent selenoperoxidases

L15 ANSWER 18 OF 18 CA COPYRIGHT 2003 ACS
TI Different effects of Triton X-100, deoxycholate, and fatty acids on the kinetics of glutathione peroxidase and phospholipid hydroperoxide glutathione peroxidase

=> d bib ab 10 13 14 15 18

L15 ANSWER 10 OF 18 CA COPYRIGHT 2003 ACS
AN 133:189863 CA
TI Method to search for male antifertility drugs based on PHGPx activity determination
IN Flohe, Leopold; Ursini, Fulvio
PA Germany
SO PCT Int. Appl., 33 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2000053800	A1	20000914	WO 2000-EP1878	20000306

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA,

UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
EP 1159445 A1 20011205 EP 2000-910774 20000306
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO
PRAI EP 1999-103960 A 19990309
WO 2000-EP1878 W 20000306
AB The invention relates to a method to search for male antifertility drugs based on activity detn. of phospholipid hydroperoxide glutathione peroxidase (PHGPx) derived from human tissue or human cells or from related mammalian species.
RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L15 ANSWER 13 OF 18 CA COPYRIGHT 2003 ACS
AN 122:26500 CA
TI Purification of a cytosolic enzyme from human liver with phospholipid hydroperoxide glutathione peroxidase activity
AU Chambers, Stephen J.; Lambert, Nigel; Williamson, Gary
CS Food Molecular Biochemistry Department, Institute Food Research, Norwich, NR4 7UA, UK
SO International Journal of Biochemistry (1994), 26(10/11), 1279-86
CODEN: IJBOBV; ISSN: 0020-711X
PB Elsevier
DT Journal
LA English
AB Phospholipid hydroperoxide glutathione peroxidase (PHGPx) is a selenoprotein which inhibits peroxidn. of microsomes. The human enzyme, which may play an important role in protecting the cell from oxidative damage, has not been purified or characterized. PHGPx was isolated from human liver using ammonium sulfate fractionation, affinity chromatog. on bromosulfophthalein-glutathione-agarose, gel filtration on Sephadex G-50, anion exchange chromatog. on Mono Q resin and high resoln. gel filtration on Superdex 75. The protein was purified about 112,000-fold, and 12 .mu.g was obtained from 140 g of human liver with a 9% yield. PHGPx was active on hydrogen peroxide, cumene hydroperoxide, linoleic acid hydroperoxide and phosphatidylcholine hydroperoxide. The mol. wt., as estd. from non-denaturing gel filtration, was 16,100. The turnover no. (37.degree., pH 7.6) on (.beta.-(13-hydroperoxy-cis-9, trans-11-octadecadienoyl)-.gamma.-palmitoyl)-L-.alpha.-phosphatidylcholine was 91 mol mol-1 s-1. As reported for pig PHGPx, the activity of the enzyme from human liver on cumene hydroperoxide and on linoleic acid hydroperoxide was inhibited by deoxycholate. In the presence of glutathione, the enzyme was a potent **inhibitor** of ascorbate/Fe induced lipid peroxidn. in microsomes derived from human B lymphoblastic AHH-1 TK .+-. CHol cells but not from human liver microsomes. Human cell line microsomes contained no detectable PHGPx activity. However, microsomes prepd. from human liver contained 0.009 U/mg of endogenous PHGPx activity, which is 4-5 times the activity required for max. inhibition of lipid peroxidn. when pure PHGPx was added back to human lymphoblastic cell microsomes. PHGPx from human liver exhibits similar properties to previously described enzymes with PHGPx activity isolated from pig and rat tissues, but does not inhibit peroxidn. of human liver microsomes owing to a high level of PHGPx activity already present in these microsomes.

L15 ANSWER 14 OF 18 CA COPYRIGHT 2003 ACS
AN 121:246338 CA
TI Superoxide dismutase gene mutations as causes of neurodegenerative diseases and compounds and methods for the diagnosis, treatment, and prevention of the diseases
IN Brown, Robert; Horvitz, H. Robert; Rosen, Daniel R.
PA General Hospital Corp., USA; Massachusetts Institute of Technology

SO PCT Int. Appl., 98 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9419493	A1	19940901	WO 1994-US2089	19940228
W: CA, JP				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5843641	A	19981201	US 1993-23980	19930226
CA 2157041	AA	19940901	CA 1994-2157041	19940228
EP 686203	A1	19951213	EP 1994-910183	19940228
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
JP 08510377	T2	19961105	JP 1994-519309	19940228
US 5849290	A	19981215	US 1995-486953	19950607
PRAI US 1993-23980		19930226		
US 1994-204052		19940228		
WO 1994-US2089		19940228		

AB Disclosed is the family of genes responsible for the neurodegenerative diseases, particularly amyotrophic lateral sclerosis (ALS). Methods and compds. for the diagnosis, prevention, and therapy of the disease are also disclosed. Uses of the compds. in the prepn. of diagnostic and therapeutic medicaments are also provided. Fourteen different SOD1 missense mutations in 16 different familial ALS families were identified. The mutations were identified by PCR followed by single-strand conformational polymorphism anal. The most common single mutation was an Ala-4 to Val substitution in exon 1. This mutation reduced the total SOD activity by 50% compared to normal controls. Addnl. polymorphisms were identified in exons 3 and 4 as well as in intron 3. Some of these mutations are detectable by restriction fragment length polymorphism.

L15 ANSWER 15 OF 18 CA COPYRIGHT 2003 ACS
AN 117:229272 CA
TI Selenoperoxidase-mediated cytoprotection against merocyanine 540-sensitized photoperoxidation and photokilling of leukemia cells
AU Lin, Fubao; Geiger, Peter G.; Girotti, Albert W.
CS Dep. Biochem., Med. Coll. Wisconsin, Milwaukee, WI, 53226, USA
SO Cancer Research (1992), 52(19), 5282-90
CODEN: CNREA8; ISSN: 0008-5472
DT Journal
LA English
AB Photodynamic therapy with the lipophilic sensitizing dye merocyanine 540 (MC540) is a promising new approach for extracorporeal purging of neoplastic cells from autologous remission bone marrow grafts. Resistance-conferring cellular defenses against the cytotoxic effects of MC540/photodynamic therapy have not been well characterized. This study focuses on the cytoprotective effects of the glutathione-dependent selenoperoxidases GPX and PHGPX, which can detoxify a wide variety of hydroperoxides, including lipid-derived species (LOOHs). Murine leukemia L1210 cells were grown in 1% serum media without [L.cntdot.Se(-)] and with [L.cntdot.Se(+)] selenium supplementation. L.cntdot.Se(-) cells expressed 10-20-fold lower GPX and PHGPX activities than L.cntdot.Se(+) controls and were markedly more sensitive to MC540-mediated photoperoxidn. (LOOH formation) and clonally assessed photokilling. Susceptibility of L.cntdot.Se(-) cells to photoperoxidn. and photokilling could be fully reversed to L.cntdot.Se(+) levels by replenishing Se, and partially reversed by treating with Ebselen, a selenoperoxidase mimetic. Altered lipid compn., greater uptake of MC540, and defective catabolism of H2O2 were all ruled out as possible factors in the elevated photosensitivity of L.cntdot.Se(-) cells. Human leukemia K562 cells (capable of expressing PHGPX but not GPX) exhibited 5-10-fold lower PHGPX activity under Se-deficient relative to Se-sufficient conditions. Although MC540 uptake (nmol/mg lipid) by K562 and L1210 cells was essentially the same, the

former were more resistant to photoinactivation. However, like murine counterparts, Se-deficient cells were more susceptible to photoperoxidn. and photokilling than Se-sufficient controls. These results clearly demonstrate that GPX and/or PHGPX in L1210 cells and PHGPX in K562 cells play an important cytoprotective role during photooxidative stress. Whether membrane damage due to lipid photoperoxidn. is causally related to cell death is not certain; however, the parallel effects of Se deficiency on LOOH formation and cell killing are at least consistent with this possibility.

L15 ANSWER 18 OF 18 CA COPYRIGHT 2003 ACS
AN 106:63476 CA
TI Different effects of Triton X-100, deoxycholate, and fatty acids on the kinetics of glutathione peroxidase and phospholipid hydroperoxide glutathione peroxidase
AU Maiorino, Matilde; Roveri, Antonella; Gregolin, Carlo; Ursini, Fulvio
CS Inst. Biol. Chem., Univ. Padova, Padua, 35131, Italy
SO Archives of Biochemistry and Biophysics (1986), 251(2), 600-5
CODEN: ABBIA4; ISSN: 0003-9861
DT Journal
LA English
AB The effects of Triton X 100, deoxycholate, and fatty acids were studied on the 2 steps of the ping-pong reaction catalyzed by Se-dependent glutathione peroxidases. The study was carried out by analyzing the single progression curves where the specific glutathione oxidn. was monitored by using glutathione reductase and NADPH. Although the classical glutathion peroxidase was inhibited only by Triton, the newly discovered phospholipid hydroperoxide glutathione peroxidase (from pig heart) was inhibited by deoxycholate and by unsatd. fatty acids. The kinetic anal. showed that in the case of glutathione peroxidase only the interaction of the lipophilic peroxidic substrate was hampered by Triton, indicating that the enzyme is not active at the interface. Phospholipid hydroperoxide glutathione peroxidase activity measured with linoleic acid hydroperoxide as substrate on the other hand, was not stimulated by Triton concns. which were shown to stimulate the activity with phospholipid hydroperoxides. Furthermore a slight inhibition was apparent at high Triton concns., and the effect could be attributed to a surface diln. of the substrate. Deoxycholate and unsatd. fatty acids were not inhibitory to glutathione peroxidase but inhibited both steps of the peroxidic reaction of phospholipid hydroperoxide glutathion-peroxidase, in the presence of either amphiphilic or hydrophilic substrates. This inhibition pattern suggests an interaction of anionic detergents with the active site of this enzyme. These results are in agreement with the different roles played by these peroxidases in the control of lipid peroxide concns. in the cells. Whereas glutathione peroxidase reduces the peroxides in the water phase (mainly H2O2), the new peroxidase reduces the amphiphilic peroxides, possibly at the water-lipid interface.

=> d his

(FILE 'HOME' ENTERED AT 16:12:55 ON 05 MAR 2003)

FILE 'CA' ENTERED AT 16:13:16 ON 05 MAR 2003
L1 1098 S APYRASE
L2 47648 S ALKALINE PHOSPHATASE
L3 5762 S ADENOSINE DEAMINASE
L4 7 S L1 AND L2 AND L3

FILE 'WPIDS' ENTERED AT 16:21:49 ON 05 MAR 2003
E SUGIYAMA ATSUSHI/AU 25
L5 154 S E1 OR E2
L6 34 S APYRASE
L7 2 S L6 AND L5